Claims:

1. A process for preparing enantiomer-enriched α-hydroxycarboxylic acids or enantiomer-enriched α-hydroxycarboxylic amides starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrilase or a nitrile hydratase.

2. A process for preparing enantiomer-enriched α-hydroxycarboxylic acids starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrilase.

3. A process for preparing enantiomer-enriched α-hydroxycarboxylic amides starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrile hydratase.

4. Process according to one or more of Claims 1 to 3, characterised in that
the oxynitrilase of an organism or of the constituents of a plant selected from the group consisting of Sorghum bicolor, Hevea brasiliensis, Mannihot esculenta and almond kernels is employed.

5. Process according to one or more of Claims 1 and/or 2, characterised in that
the nitrilase of an organism selected from the group consisting of Rhodococcus strains or of Alcaligenes faecalis is employed.

6. Process according to one or more of Claims 1 and/or 3, characterised in that
the nitrile hydratase of an organism selected from the group consisting of Rhodococcus spec., Rhodococcus rhodochrous and Rhodococcus erythropolis is employed.

7. Process according to one or more of the preceding claims,

characterised in that
the reaction is implemented in an aqueous medium at a pH value of 6.0-9.0.

8. Process according to one or more of the preceding claims,
characterised in that
the reaction is implemented within a temperature interval of 20-40 °C.

9. An enzymatic reaction system exhibiting an oxynitrilase, a nitrilase or a nitrile hydratase, water, a cyanide donor and an aldehyde or a ketone.

10. A whole-cell catalyst exhibiting a cloned gene for an oxynitrilase and a nitrilase or a nitrile hydratase.

11. Whole-cell catalyst according to Claim 9,
characterised in that
in the case where a nitrile hydratase is present said whole-cell catalyst likewise exhibits a cloned gene for an amidase.